FIG.1

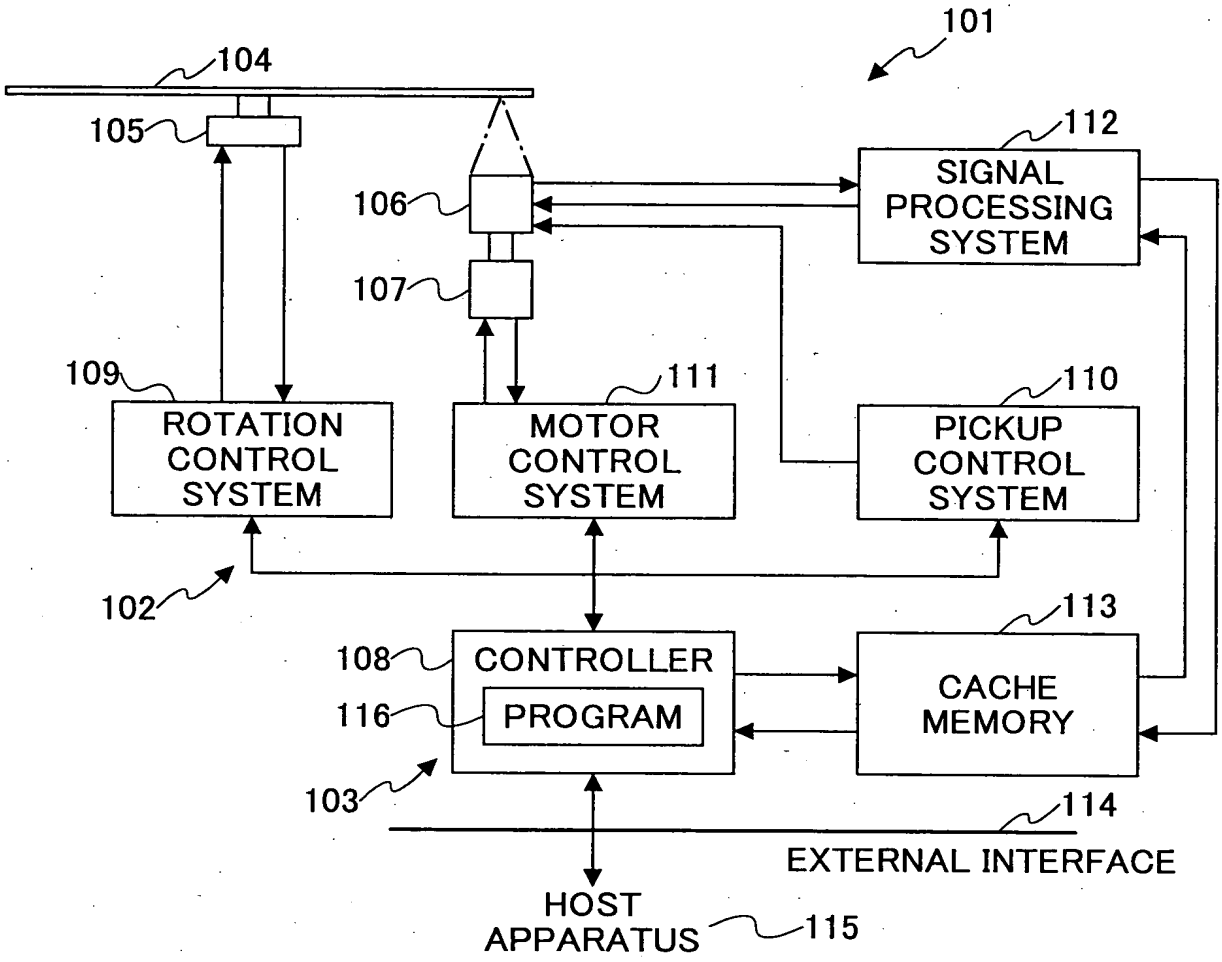

101
104
105
106
107
112
SIGNAL PROCESSING SYSTEM
109
ROTATION CONTROL SYSTEM
111
MOTOR CONTROL SYSTEM
110
PICKUP CONTROL SYSTEM
102
108
CONTROLLER
116
PROGRAM
113
CACHE MEMORY
103
114
EXTERNAL INTERFACE
HOST APPARATUS
115

FIG.2A

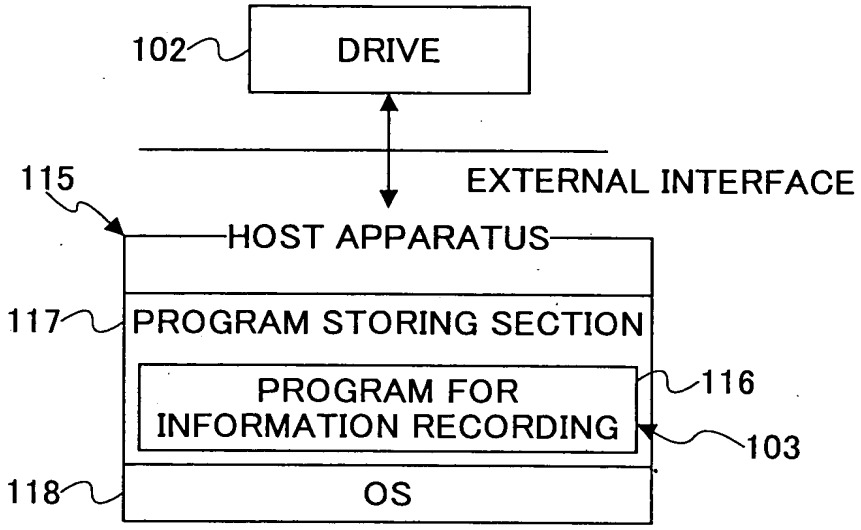


FIG.2B

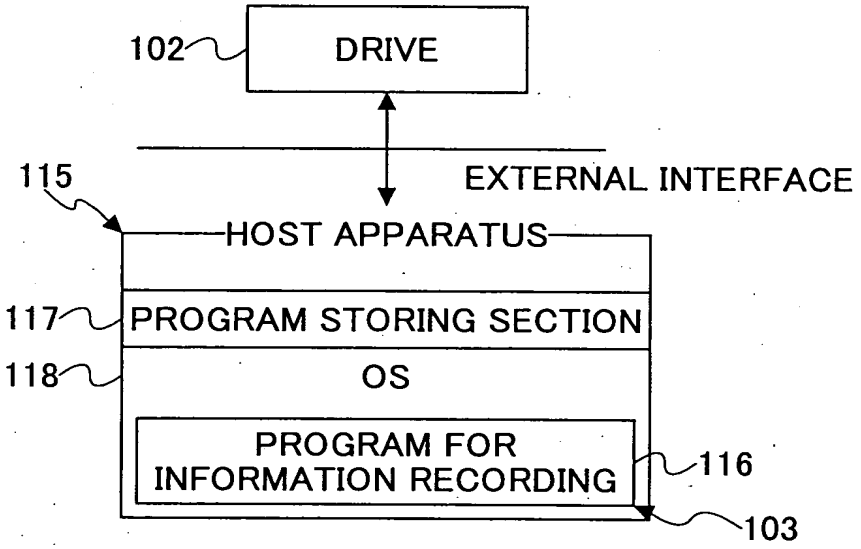
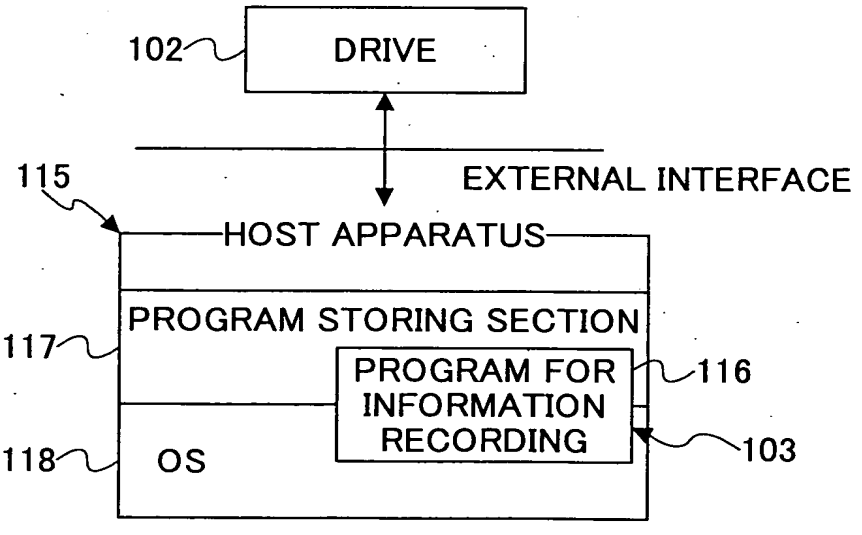


FIG.2C



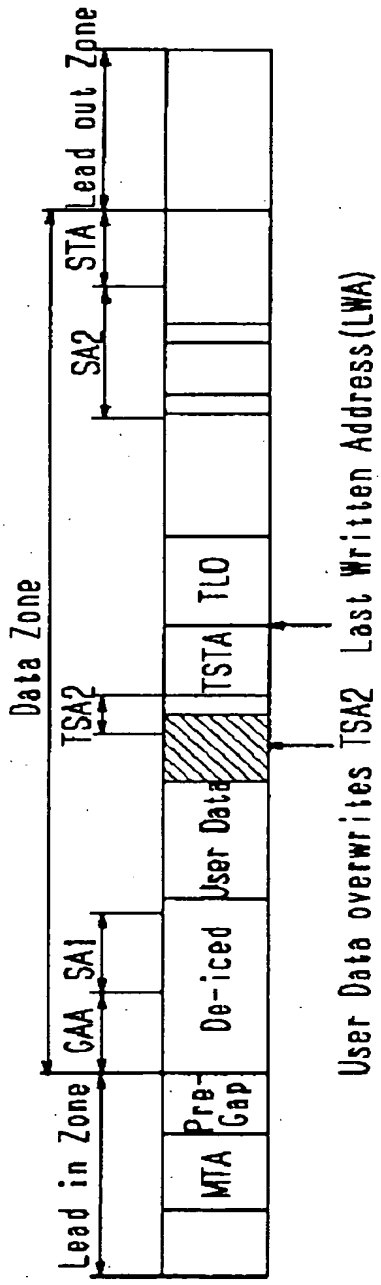


FIG.3A

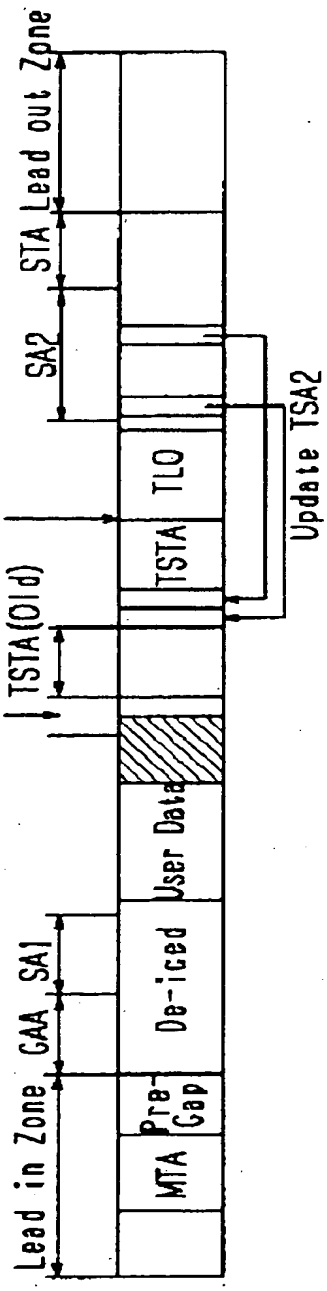


FIG.3B

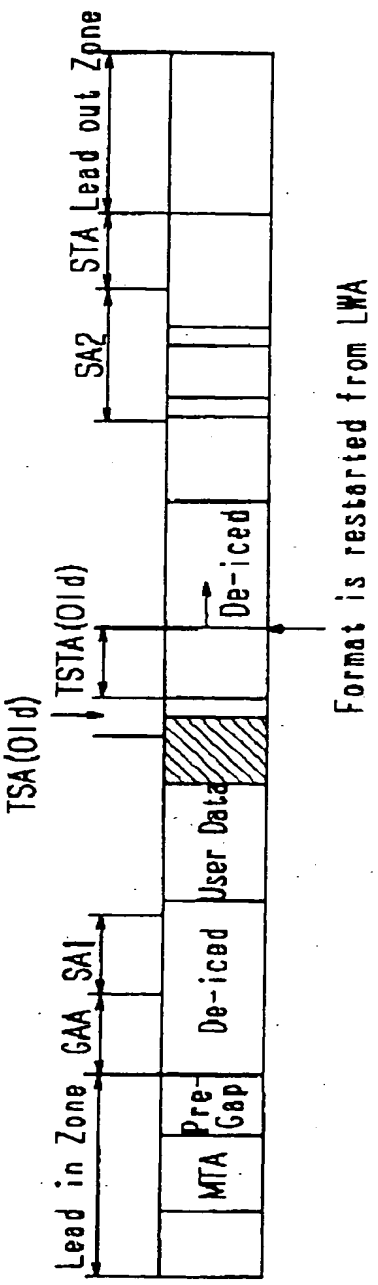


FIG.3C

FIG.4

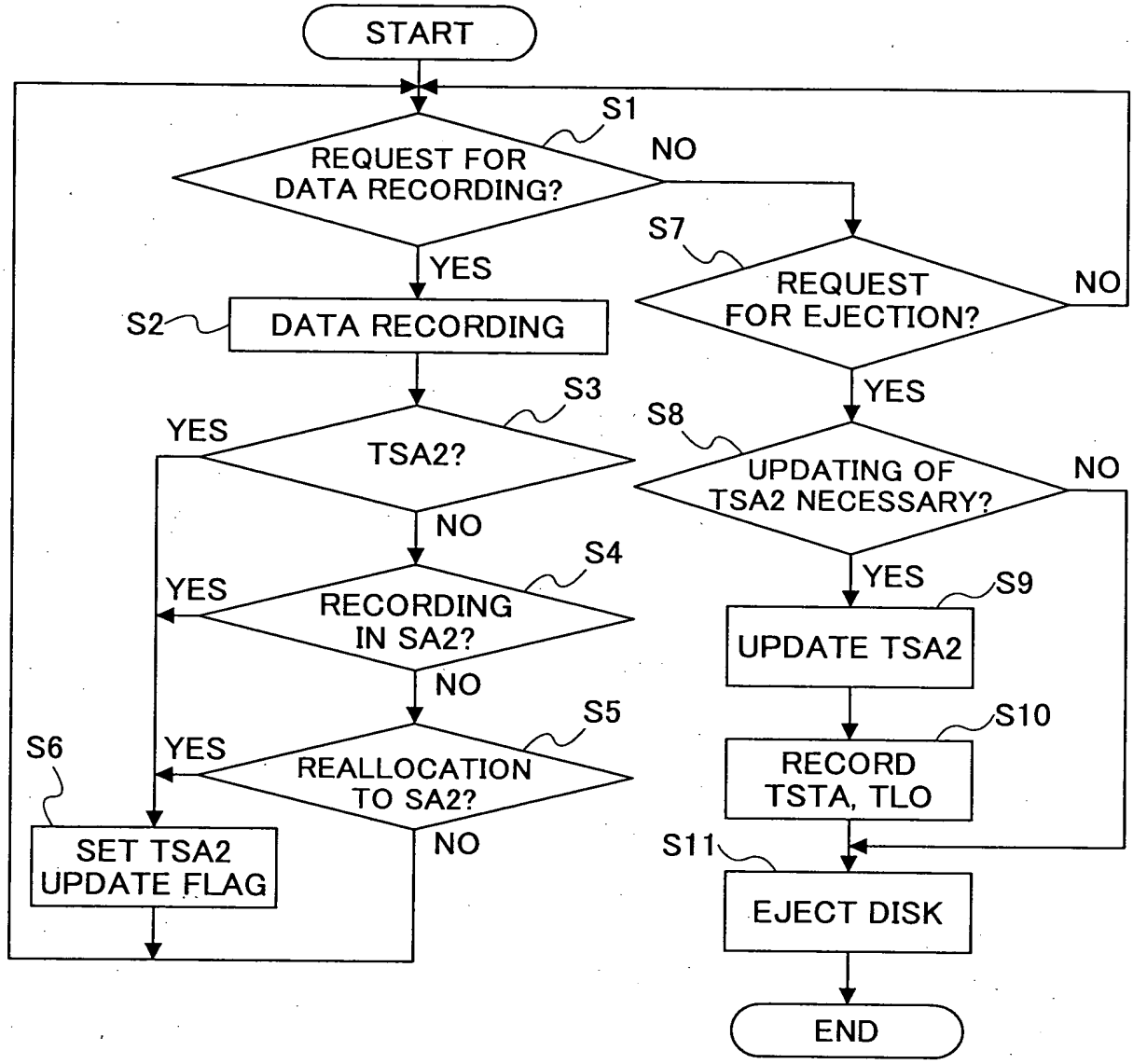

START
S1
REQUEST FOR DATA RECORDING?
NO
YES
S2
DATA RECORDING
S3
TSA2?
YES
NO
S4
RECORDING IN SA2?
YES
NO
S5
REALLOCATION TO SA2?
YES
NO
S6
SET TSA2 UPDATE FLAG
S7
REQUEST FOR EJECTION?
NO
YES
S8
UPDATING OF TSA2 NECESSARY?
NO
YES
S9
UPDATE TSA2
S10
RECORD TSTA, TLO
S11
EJECT DISK
END

FIG.5

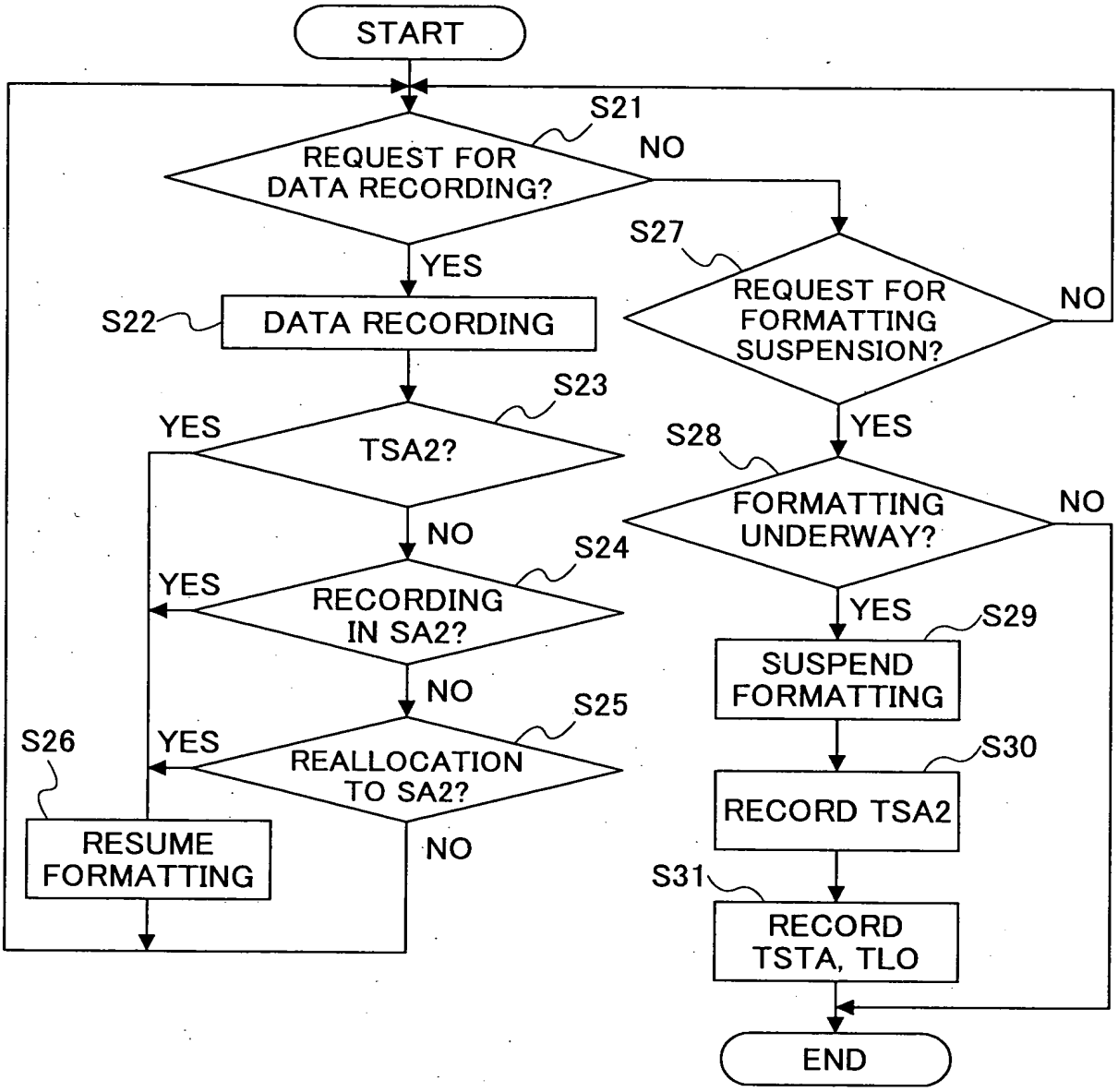
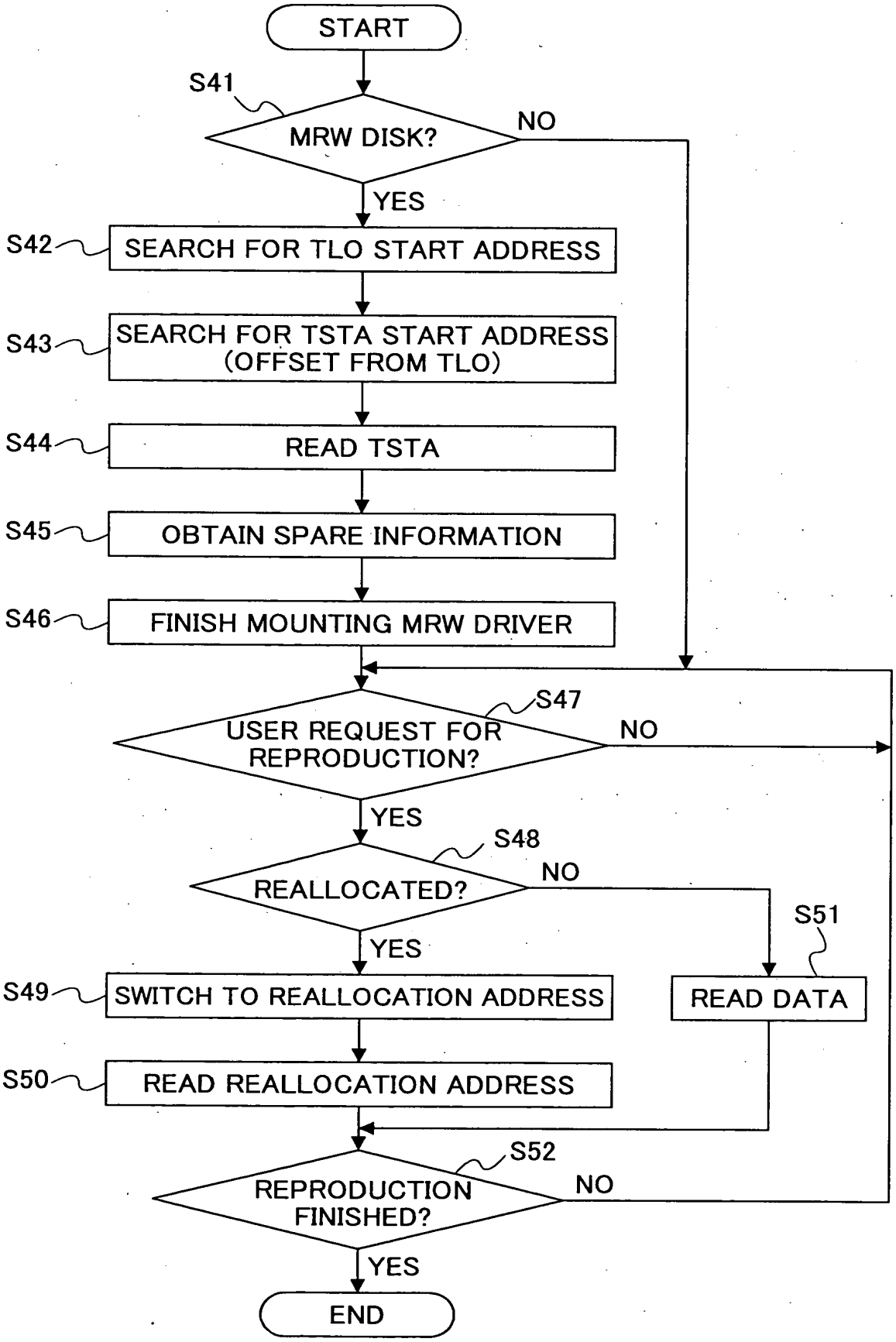

START
S21
REQUEST FOR DATA RECORDING?
NO
YES
S22
DATA RECORDING
S23
TSA2?
YES
NO
S24
RECORDING IN SA2?
YES
NO
S25
REALLOCATION TO SA2?
YES
NO
S26
RESUME FORMATTING
S27
REQUEST FOR FORMATTING SUSPENSION?
NO
YES
S28
FORMATTING UNDERWAY?
NO
YES
S29
SUSPEND FORMATTING
S30
RECORD TSA2
S31
RECORD TSTA, TLO
END

FIG.6


START
S41
MRW DISK?
NO
YES
S42
SEARCH FOR TLO START ADDRESS
S43
SEARCH FOR TSTA START ADDRESS (OFFSET FROM TLO)
S44
READ TSTA
S45
OBTAIN SPARE INFORMATION
S46
FINISH MOUNTING MRW DRIVER
S47
USER REQUEST FOR REPRODUCTION?
NO
YES
S48
REALLOCATED?
NO
YES
S49
SWITCH TO REALLOCATION ADDRESS
S50
READ REALLOCATION ADDRESS
S51
READ DATA
S52
REPRODUCTION FINISHED?
NO
YES
END

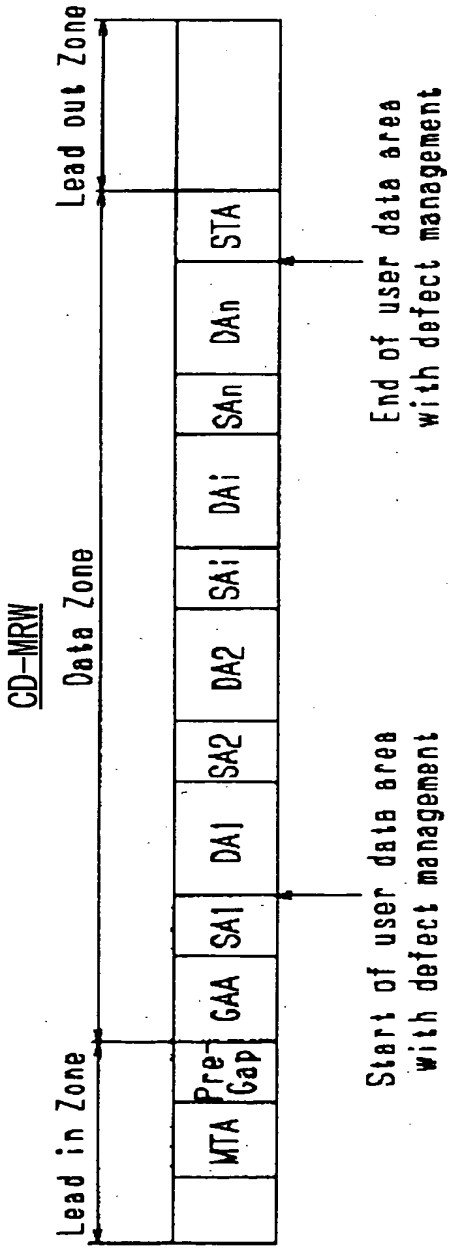

CD-MRW
Lead in Zone
Data Zone
Lead out Zone
MTA
Pre-Gap
GAA
SA1
DA1
SA2
DA2
SAi
DAi
SAn
DAn
STA
Start of user data area with defect management
End of user data area with defect management

FIG.7A

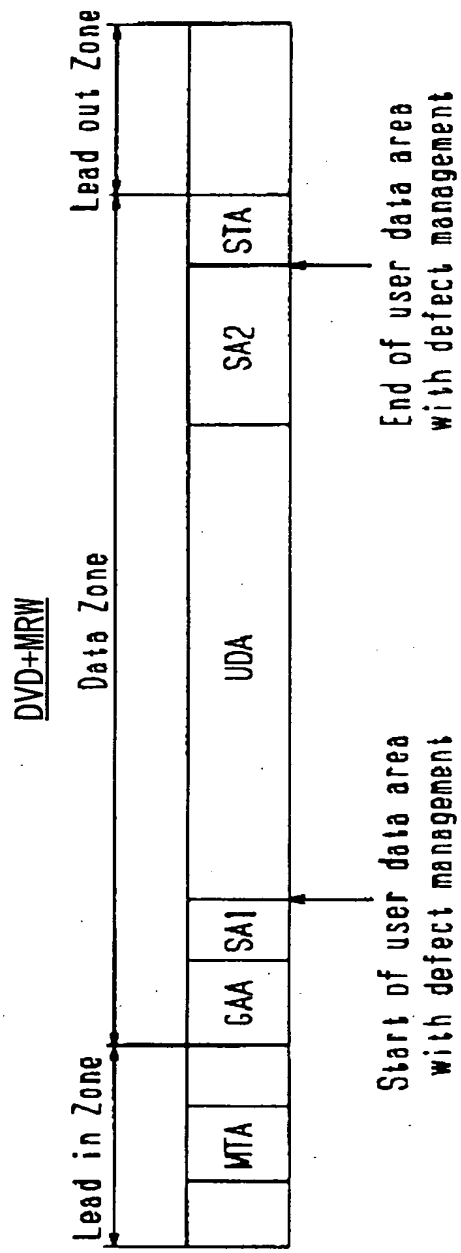

DVD+MRW
Lead in Zone
Data Zone
Lead out Zone
MTA
GAA
SA1
UDA
SA2
STA
Start of user data area with defect management
End of user data area with defect management

FIG.7B

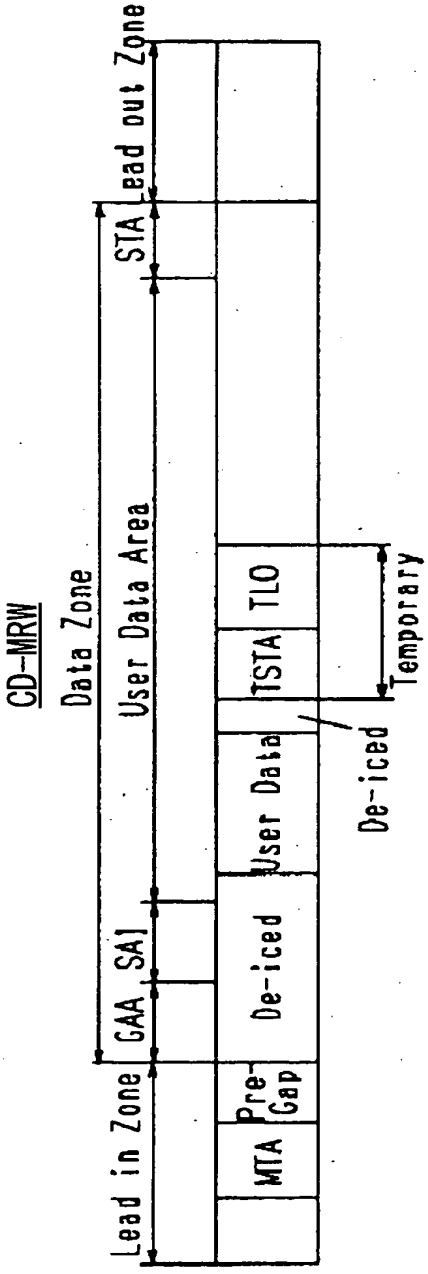

CD-MRW
Data Zone
User Data Area
Lead in Zone
Lead out Zone
GAA
SA1
STA
MTA
Pre-Gap
De-iced
User Data
TSTA
TLO
De-iced
Temporary

FIG.8A

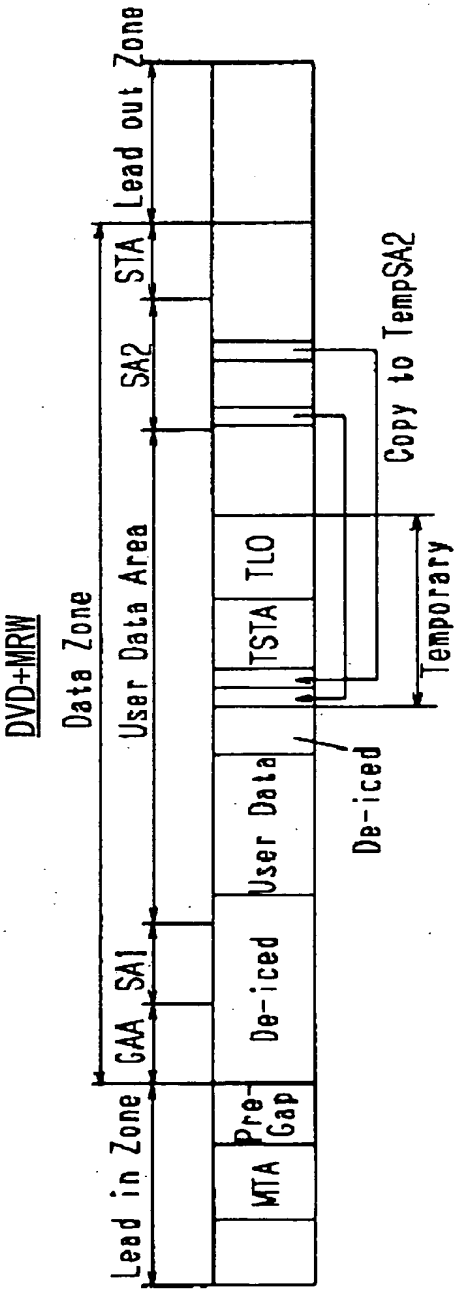

DVD+MRW
Data Zone
User Data Area
Lead in Zone
Lead out Zone
GAA
SA1
SA2
STA
MTA
Pre-Gap
De-iced
User Data
TSTA
TLO
Copy to TempSA2
De-iced
Temporary

FIG.8B

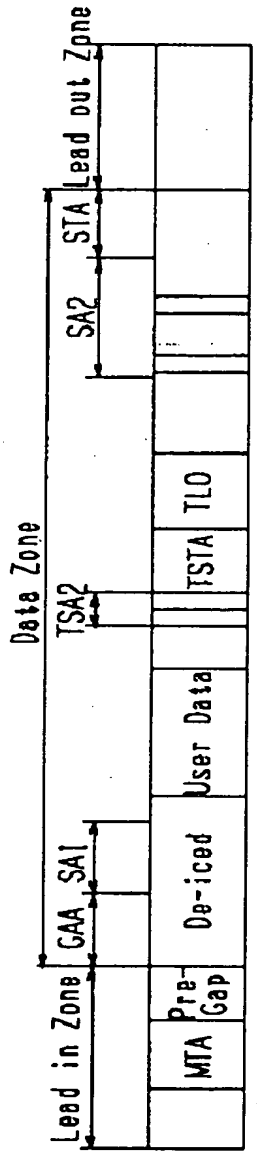


FIG.9A

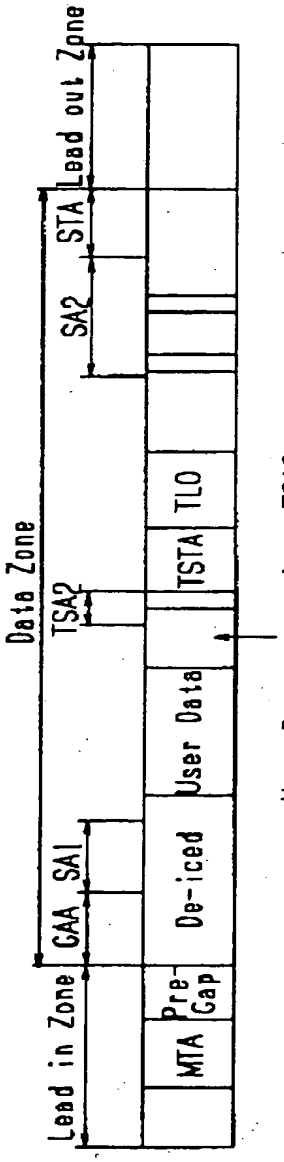


FIG.9B

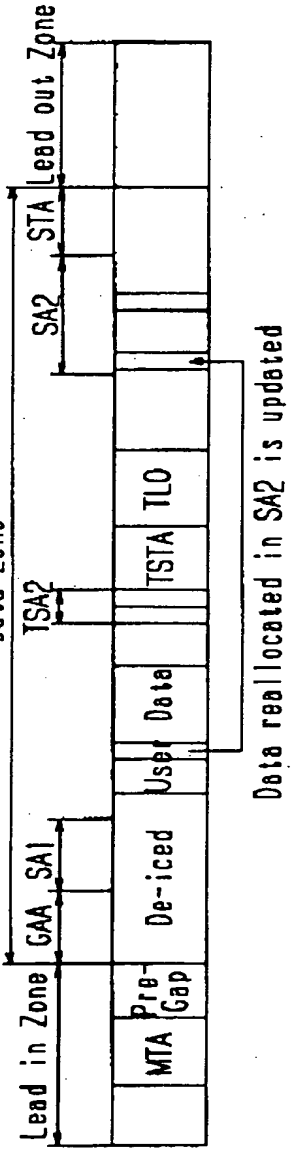


FIG.9C

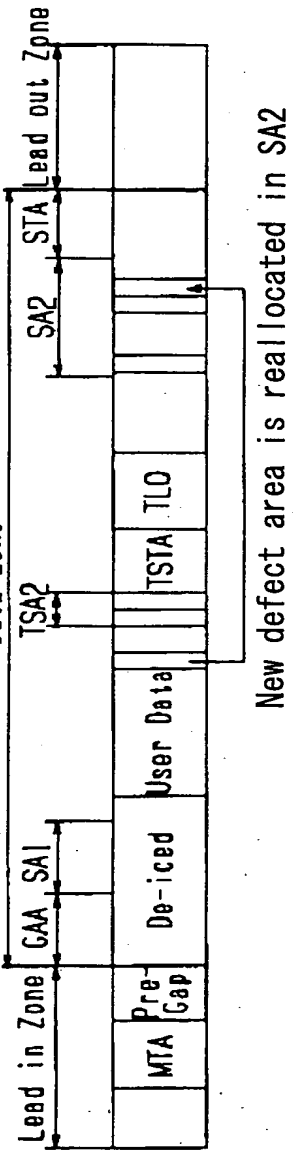


FIG.9D